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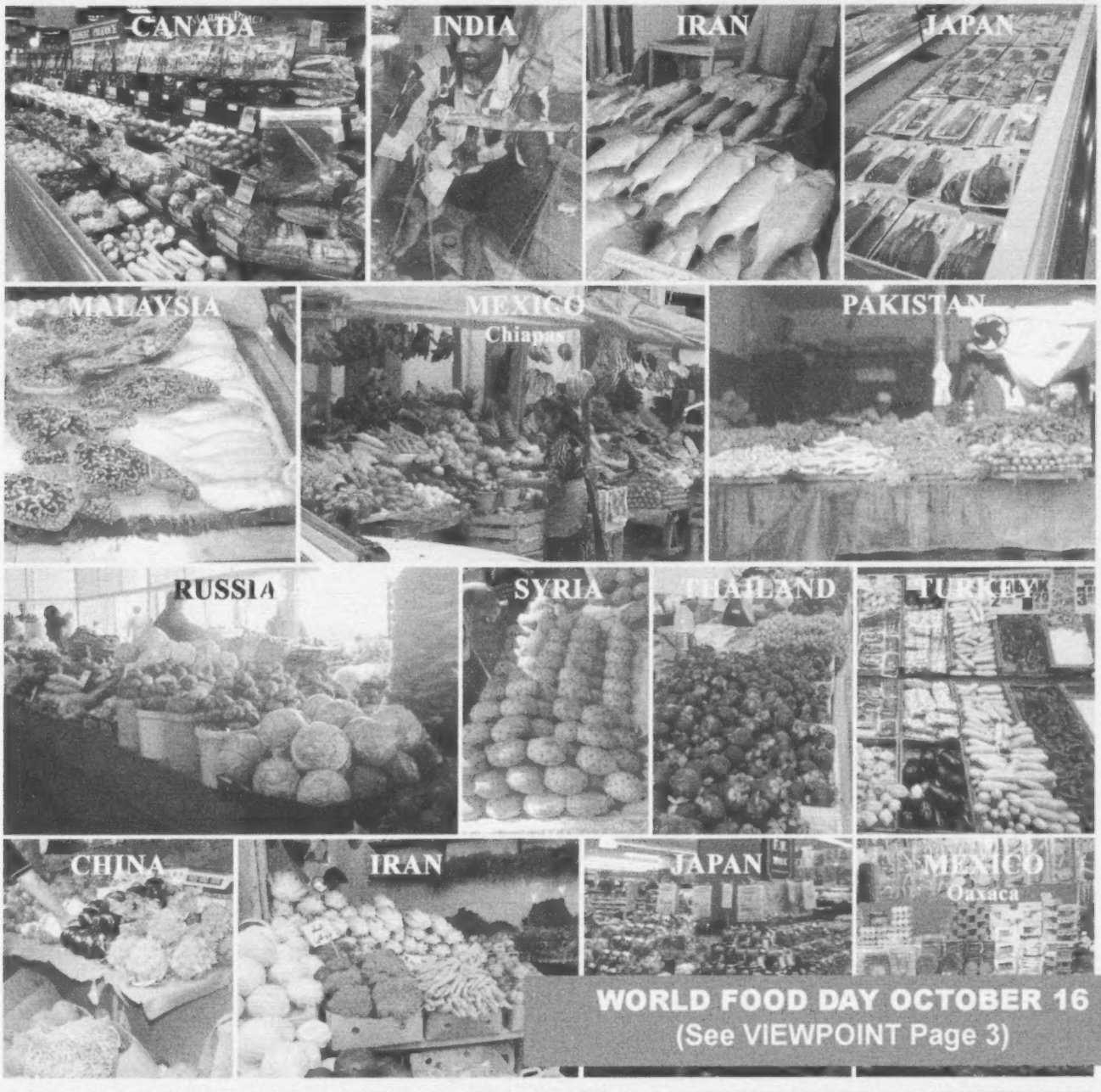

WORLD FOOD DAY OCTOBER 16

(See VIEWPOINT Page 3)

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Articles or comments are welcomed and should be sent to announcements@aspb.ab.ca

...notes from the E.D.

As you may have read in the September issue of Alberta Biologists Monthly (the ASPB's monthly e-newsletter), the ASPB Board recently created two new board committees: the Government Relations Committee (which will work with the Alberta Ministry of Jobs, Skills, Training and Labour to revise the Professional Biologists Regulation in preparation for the membership to vote on the revisions), and the Ownership Linkage Committee (which will reach out to the membership for input into what direction they envision for the Society).

Members have requested some clarification of the relative mandates of "board" committees versus "staff" committees. The Society now operates under the Policy Governance® model, which stipulates simply that board committees assist the board in doing its job. Examples include the Discipline, Registration, and Practice Review Committees; their work is specifically on behalf of the board.

The board may also implement committees to address a specific issue, so instead of the entire board working on a project, a committee may be formed to address a situation and report back to the board. (The board is still the final decision maker, but the committee brings options for the board to consider.)

Under Policy Governance®, the board focuses its attention on setting policies and ensuring that management is adhering to them. This frees the board up to do its job: governing ASPB and focusing on the needs of the membership and ensuring the public protection mandate is fulfilled as granted by the province's Professional Biologist Regulation. On behalf of the members, this means the board will be more focused on direction-setting than managing the Society and its many activities and services.

Staff committees, on the other hand, are those which assist management to carry out those many functions of ASPB, such as conference planning, professional development, student outreach, and practice area steering committees. These committees are in place to further the work of ASPB and are under the direction of the Executive Director.

Under a committee structure which separates board functions from staff functions, their relative roles can be clearly delineated for both the board and management, allowing for a more efficient society which can better serve the needs of its members.

Jennifer Sipkens, ASPB Executive Director

Correction

The photo caption on Page 5 of the Spring Edition of BIOS misspelled Peggy Thompson Publication Award winner Dave Downing's name. Please accept our apologies!

An update from the ASPB President

by Christopher Clement, P. Biol.

Our Society continues to grow and move forward this year. Membership in the ASPB is now more than 1600 strong, with the number of applicants continuing to increase yearly. Our proactive Board of Directors is working on a number of important issues, of which one is particularly challenging – our ongoing discussions with the foresters, forest technologists and chemists with regard to the proposed new Environmental Science Professionals Act.

We have been participating in meetings on this subject for more than 18 months in an effort to develop a process and framework for the evolution of this new act. It needs to be iterated that this initiative was – and continues to be – promoted by the Government of Alberta, and although we continue to participate we are a long way from presenting a proposal to the members for consideration. At this time the Board is keeping its options open; a supportable option could include specified cooperative processes as well as a significant level of autonomy, but even that concept needs a lot more work before we might feel comfortable bringing it to the membership.

These are exciting times to be a professional biologist. As the world-wide demand for resources continues to grow, so does the need for qualified environmental practitioners. Not only are we in demand, we are also the key group that is connected to the natural world. We, amongst all of the professionals, can provide environmental solutions, recommend appropriate mitigation measures for industrial development, and provide strategies to protect listed plants and animals. In response to this changing world, the Board is being visionary with respect to membership, registration, governance, communication, management and finance.

And on a lighter – but nonetheless important – note, we are close to having a brand-new website which will be amazing! This, too, is a daunting task (undertaken by professionals, not your Board!) because there is much more to the ASPB website than being pretty; it also houses the database which is the nerve-centre of our Society. The new site will be user-friendly and fully meet the needs of our two owners: the members and the public.

It is a privilege to serve as President during these exciting times!

VIEWPOINT
Food biodiversity: the challenge of food security

By S. K. Basu, P. Biol.

World Food Day is an international event celebrated around the planet on October 16th every year to highlight the importance of global food security and the significance of food independence and having a food surplus. It is also an opportunity to appreciate the amazing food diversity that we as humans share across the various continents of the world, as it is showcased in the cover design of this edition of BIOS.

The diversity of species which are consumed as food around the world is indeed astonishing, and yet they are strangely similar in different corners of the world. Modern trade and commerce, and improvements in food transportation technology and preservation techniques, have made it possible to transport traditional and non-traditional, seasonal and non-seasonal, food and food products around the globe throughout the year.

However, these modern realities also bring challenges, such as population pressure, economic and political instability, environmental pollution, global climate change, over-harvesting and non-judicious exploitation of natural resources. These realities are already endangering several food species worldwide, presenting an impending challenge for people residing in both the developed and under-developed countries of the world. Global food diversity is inextricably linked with long-term global food sustainability and also with human health and nutrition. For this reason, it is important for all of us to share a common platform as professionals, non-professionals and amateurs alike, to raise our voices against the over-exploitation, poor management, non-judicious use and the illegal trade in wild food species, if we are to establish a better and more sustainable world for future generations.

From the standpoint of biologists, it is important for us to investigate in detail the challenges and opportunities associated with food diversity issues across the planet. We must first understand the level of challenges which are impacting the global network of food diversity from the perspective of both developed and under-developed countries, and then help the public appreciate and understand its importance in our lives. As biologists we need to stress that biodiversity – and food diversity – are important links to our long term health and nutrition, and therefore the loss and erosion of key food resource species anywhere will in turn impact food consumption patterns globally.

On this World Food Day, as professional biologists we should give some thought to how we can best educate the public about the importance of global food diversity, and how we can advise the implementation of policies aimed at conserving this diversity, both regionally and globally.

New ASPB scholarships created for tech sector students

As the Alberta Society of Professional Biologists (ASPB) prepares for welcoming members into the new technologist sectors, the Society has reached out to Alberta's colleges offering biology-related courses.

In the 2014/2015 course year, Lakeland College at Vermillion will be distributing two $500 awards, available to one student enrolled full-time in the 2nd year of Wildlife & Fisheries Conservation and one student enrolled full-time in the 2nd year of Conservation & Restoration Ecology. Awards will be based on the following criteria: recipient must be passionate about the field of biology, involved in extra-curricular activities related to their program and profession, and in good academic standing.

At the Northern Alberta Institute of Technology (NAIT), three $675 scholarships will be available to students in the second level of the Biological Sciences Technology program at NAIT. Awards will be made on the basis of a minimum academic achievement of 65% in BIOL 2401A, Biological Sciences Project, as well as participation through volunteer work in the community and NAIT. A student from each of Biological Sciences Technology streams: Environmental Sciences, Laboratory and Research, and Renewable Resources, will be selected to receive the award.

ASPB awards recognize excellence

The Alberta Society of Professional Biologists recognizes excellence at both the professional and student levels, through a robust awards system. Currently, six awards are presented to practising biologists, recognizing publications, volunteerism, and distinguished service. At the student-in-biology level, academic scholarships are available to students at several of Alberta's universities and technical colleges.

The Peggy Thompson Publication Awards are designed to recognize and encourage high standards of achievement in publishing biological information and in conveying an understanding of the concepts and application of biological sciences. One award is made annually in each of three categories: scientific papers published in professional, refereed journals; biological technical reports; and publications or other media communicating biological information to the general public. Recipients must be Members of the ASPB; nominations for this award must be received by February 1st, 2015. Last year's award recipients were Dave Downing, P. Biol., Saikat Kumar Basu, P. Biol. and Robin Leech, P. Biol.

The J. Dewey Soper Award is given periodically by Alberta Society of Professional Biologists (ASPB) to a Canadian Biologist who has made significant contributions to the field of biology, and is awarded in memory of Dr. J. Dewey Soper, 1893-1982, who was highly regarded for his role in the development of biology in western and northern Canada. Nominations for this award must be received by February 1st, 2015.

Recipients of the Soper Award have included Dr. Stu Smith, Dr. Ian McTaggart-Cowan, Richard Fyfe, Dr. Valerius Geist, Dr. Stephen Herrero, Dr. Charley Bird, Dr. Geoff Holroyd, Dr. Joe Nelson, Dr. Ian Stirling, Dr. Joyce Gould, Peter Sherrington, Dr. Gordon Stenhouse, and Dr. Robin Leech.

The ASPB Distinguished Service Award is presented to an ASPB member who has been a member of the Society for at least 10 years and who has served the ASPB in a way that reflects the Society's objectives for high standards, ethics, public service, networking, education, and as a voice for Professional Biologists in Alberta. Nominations for this year must be received by February 1st, 2015. Last year's recipient was Ken Chatel, P. Biol.

Nominees for the Volunteer of the Year Award must be current Society members who have made significant contributions to the ASPB's programs, and service to the membership, at a volunteer level. Volunteer professionals are the lifeblood of this Society in all matters, including governance (the Board of Directors), regulated committees (e.g. the Registration, Practice Review, and Discipline committee) and staff committees (e.g. Practice Area Steering Committees, Conference Committee, Professional Development Committees, Student Outreach Committee). Volunteers are highly valued and are essential both to fulfilling our public (government) mandate and to keeping membership fees as reasonable as possible for all our members. Nominations for this year's Volunteer of the Year Award must be received by February 1st, 2015.

Criteria and nomination information is available for the foregoing awards at http://www.aspb.ab.ca/awards. Dave Faley, P. Biol., is the long-serving Chair of the ASPB's Awards Committee, and interested readers can contact him directly at ealeyd@telusplanet.net or 780-434-0841.

Scholarships, Bursaries and Institutional Awards

The following awards are funded by the Society but are not operated by the Society or its committee; instead, they are administered by the relevant academic institutions.

There are ASPB Graduate Scholarships available at the University of Alberta, as well as the D. Alan Birdsall Memorial Scholarship which is awarded annually to a graduate student and/or post-doctoral fellow who is specializing in the field of applied fisheries ecology and management and is continuing studies at the University of Alberta. Salvatore Blair is the 2014 recipient.

ASPB Scholarships are awarded to graduate students for academic achievement and excellence in biological research at the University of Lethbridge, and similarly at the University of Calgary, along with bursaries which are in place for the first time this year at Lakeland College and the Northern Alberta Institute of Technology. The Society also stimulates interest in biology among Alberta students at the high school and elementary school levels through Science Fair Awards at the Calgary and Edmonton Regional Science Fairs.

Volunteer nears two decades overseeing ASPB Awards

Dave Ealey travelled from eastern Canada to Edmonton in the mid-1970s to earn a Master's in Zoology at the University of Alberta. He joined ASPB in the late '70s, served as a Director on the Board for six years, including two as Treasurer, and has been the Awards Committee Chair for almost 20 years. He spent more than a decade as a private consulting wildlife biologist on projects throughout western and northern Canada, then more than two decades as a technical editor and a communications specialist and manager in Alberta Environment and Sustainable Resource Development. Dave retired from government in 2012. He maintains his professional contacts from his three careers, frequently attending conferences and workshops, serves as a mentor to junior biologists and public relations students, and explores cultural, recreational and educational opportunities in his copious spare time. An avid bird watcher, he participates in bird research, citizen science and bird banding activities. Dave lives with his wife in south Edmonton and enjoys all four seasons.

In conversation with:
Microbiologist Markus Thormann

Microbiologist Markus Thormann applies his practice area knowledge to finding solutions to industrial issues.

Markus N. Thormann, PhD, PWS, P. Biol., is a Senior Wetland and Aquatic Ecosystems Ecologist and the Core Service Manager for Ecological and Environmental Management in the Prairie Region at Worley Parsons. His areas of expertise include plant community dynamics, carbon and nutrient cycling in wetlands, organic matter decomposition, plant and microbial biodiversity, impacts of natural and anthropogenic disturbances on wetland distribution and function, and surface water quality assessments and monitoring.

***BIOS:** How does microbiology fit into the ASPB? Is it more than just a narrowly-defined practice area, somewhat removed from the mainstream of the current membership?*

MNT: Microbiology, in the strictest sense of the definition, really concerns itself just with "bacteria"; however, in the sense that we are using it in the ASPB, microbiology is much broader than just bacterial research practices; it includes the study of fungi, and can encompass things like cell biology, genetics, pathology, some pharmacology. Anything that can't be seen with the naked eye – "micro" – we will capture under the term "microbiology".

***BIOS:** It seems, in a way, that's everybody! Microbiology at some level crosses over into everything that biologists do.*

MNT: Yes, but often small components of it. You mentioned we have a preponderance of wildlife biologists and vegetation specialists who belong to the ASPB, and you are absolutely right. That is really what industry requires of us at this point; going out and doing wildlife surveys or vegetation or rare species surveys. That is where the focus is right now, and has been in the past, so, the use of microbiology in consulting or industry has been very limited. As a result, there are only very few microbiology positions available in industry and government; however, I think that is beginning to change.

***BIOS:** Microbiology would seem to have the keys to finding solutions to the problems we face as a human society, especially the problems which result from industrial and other impacts.*

MNT: Absolutely. In the past it hasn't really been on the radar, but it is getting there. I know of several applications of microbiological knowledge in reclamation and remediation projects. If there is an oil spill, for example, the provincial government and industry have actually been using microbiological approaches to deal with the hydrocarbons that have been released into the landscape. The technique that is being used is, in essence, a slurry of (mostly) bacteria that is being sprayed onto an oil spill (or an oil slick on a body of water). The bacteria in that slurry have been specifically selected to degrade various hydrocarbons, leaving behind a clean environment after some time. That technique has been used a few times over the last couple of years, and it is going to be used much more frequently in the future, because Alberta Environment and Sustainable Resource Development are onboard with this and is actually endorsing it – signing off on it – and allowing industry to follow that procedure.

This is just one application of microbiology in industry that's already being used; there are others that I know will get more attention as well, pertaining to re-vegetation efforts at reclaimed sites where mycology (the study of fungi), for example, could be critical. The fungi that are important in that case are mycorrhizal fungi which grow on the roots of almost all plants on the planet. They actually help plants establish themselves and translocate nutrients and water from the soil to their host plants. In addition, these fungi provide some protection to their hosts from various contaminants, including some hydrocarbons and heavy metals. The use of mycorrhizal fungi in association with certain plant species might be another field where microbiology is going to become more important in the future.

***BIOS:** So the future of microbiology and microbiologists in Alberta is really in ascendancy?*

MNT: I definitely think so. It is going to become more and more important to understand how microbiological techniques and knowledge can be used in various situations, such as oil spills or reclamation projects. I think the government is already open to it, and some industries are as well.

***BIOS:** I expect industry is right in the forefront when it comes to requesting that these techniques be applied, or at least investigated!*

MNT: It's much cheaper than what have become accepted as the conventional methods, yes. It does require some very specialized knowledge, which isn't very abundant at this time, but I think industry is driving it and the regulators are following suit.

***BIOS:** It seems that these new techniques certainly will steepen the learning curve of those who are involved with reclamation and remediation projects. The industry may want to investigate and apply the techniques, and the microbiologists may be able to develop solutions (so to speak), but then other folks in biology may ask "in the long haul, is this going to work for the environment we are trying to protect?"*

MNT: Yes, very good point. There is a lot of knowledge in microbiology that hasn't been applied because there hasn't been an effective transfer of that knowledge into applications

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in the field, and I think that's where microbiology is lagging behind to a large degree. Wildlife biologists, for example, can say yes, we can go out and count rabbits and deer and moose, and look at habitats for those species and say whether the habitat is there or not. In contrast, microbiologists have been working more or less in a bubble, doing research for research's sake (which is also important!), rather than trying to use that research and apply it in some capacity.

This, too, is beginning to change, and this is where the opportunities lie. By and large, industry and government have had a limited understanding of microbiology and its potential applications, and they need to be sold on how microbiology can help them to reach their goals, whether it's the complete remediation of a spill site, the reclamation of a tailings deposit or overburden dump, or whatever it may be. Once that "selling" of the microbiology approach has been done, industry will buy into it, and it will become part of mainstream practice, just like rare species surveys, for example.

BIOS: What should a microbiologist do to try to get a foothold in industry or consulting?

MNT: The biggest need right now is to show the relevance of microbiological work to the needs of industry. If I am a microbiologist graduating with a Ph.D. from the university, I will need to approach an oil and gas company, for example, and say "I have this Ph.D. in microbiology and my expertise is in carbon cycling; here is why I think you should hire me". This is selling that transferability, showing how relevant your research and expertise are to the business of a potential employer. There are huge opportunities out there. For example, all those oil sand mines will need to be reclaimed, some of this is already going on, and microbiology can play a critical role in those reclamation efforts over the coming decades.

BIOS: Let's talk a bit about the wider practice of microbiology, in which there are many practitioners who have little if anything to do with bugs or bunnies or wetlands or soils. There are other applications that are being studied; how do we include them in this discussion, and the beginnings of a microbiology practice area within the ASPB?

MNT: First we have to know who they are and what they are doing. They are probably working as research assistants or scientists in various labs at educational institutions or government research facilities. As a person who has done microbiology research for the federal government in my career, I know we tend to do more research that interests us rather than research which is really applicable in today's world. This research has value, of course, but if we have microbiologists who are graduating soon or we have post-doc appointments that are approaching the end of their contracts, we will have a lot of expertise for very few positions in industry, consulting, or governments department. We have to find a way to keep the research they have been doing and apply it in some capacity. These folks need to make a bit of a shift in their thinking and ask themselves "what can I research that can be transferred into something that is need by industry". Of course, many are also engaged in important work like pharmacology and biomedical research, developing new drugs, for example, that can deal with the growing number of bacteria which are becoming resistant to our run-of-the-mill antibiotics.

BIOS: Would you hazard a guess about the proportion of people who are microbiologists working in the various industries? The new approach we have been discussing perhaps includes microbiologists working in oil and gas, municipal management, and so forth; how about the others?

MNT: This is truly a guess: if we take all the people who are working as biologists of any sort, microbiologists are probably less than ten percent. Of that ten percent, nine percent out of that ten are probably working at pure research institutions, or hospitals and so forth. The other one percent would be working for industry or government. This is largely driven by a lack of understanding of the need for that expertise in industry or consulting at this time.

BIOS: How can the ASPB help?

MNT: The first step is underway, setting up a microbiology practice area steering committee so we can provide a "home" for all the microbiologists who are already ASPB members, and also let other microbiologists know that there is a home for them in the Society. Part of our mandate as a steering committee will be to look at this transference of knowledge into application, and provide a forum where these topics and issues can be discussed, with experts talking to experts about where our profession is headed. I would also like to see it serve as a portal for industry to access that much needed expertise in the future.

BIOS: Thank you!

Microbiology practice area steering committee underway

In the last edition of *BIOS*, we published an article by Dapeng Gong, P. Biol., inviting the establishment of a Microbiology practice area steering committee at the ASPB, to join the already-in-place Wetland Ecology and Reclamation / Remediation practice areas.

It was an invitation, and a concept, that immediately began to bear fruit. Despite a late start because summer was already underway when the article was published, a group came together early in the summer under the leadership of Dapeng Gong and Markus Thormann, P. Biol. (and with the support of the ASPB's Executive Director) to begin the process, starting with establishing terms of reference for a new steering committee.

The group plans to meet early in the fall to continue their deliberations; as microbiologist Markus Thormann remarks in his interview with BIOS in this edition: "Part of our mandate as a steering committee will be to look at this transference of knowledge into application, and provide a forum where these topics and issues can be discussed, with experts talking to experts about where our profession is headed. I would also like to see it serve as a portal for industry to access that much needed expertise in the future."

Making mentorship work

Mentor Victor Ladipo directs activities on the job site.

Mentorship programs such as the one operated by the Alberta Society of Professional Biologists (ASPB) are generally seen as invaluable opportunities for experienced professionals to share their accumulated wisdom and knowledge with another person in their field, together forming a mentor and protégé pair. Mentors are typically the more experienced of the pair in terms of years in the profession, although sometimes a protégé may also have many years working in the profession but is seeking guidance on an unfamiliar practice area or another component of professional practice.

This summer, ***BIOS*** got in touch with Victor Ladipo (mentor) and Daxin Zhang (protégé) who came together under the ASPB mentorship program about eight months ago. Mentors and protégés decide together how they will meet (face-to-face, telephone, etc.) and how often. Since both Victor and Daxin have similar workplace realities (irregular hours and lots of travel out of Calgary) they have decided to meet on an as-needed basis, using a combination of emails, texts, telephone calls and sometimes meeting for lunch (or, as they did in August, Daxin visited Victor and his family for dinner!)

"We are fortunate that our areas of work are very similar: environmental compliance and field work (fish, vegetation, water and so on), so Victor has faced and dealt with many problems that I am facing and dealing with right now," says Daxin. "Victor is very keen on helping me with the technical aspects of regulatory compliance, such as always covering my butt through keeping a detailed paper trail!"

Daxin mentions that another difficult area they have discussed is the competitive nature in the work place. "These are real-life challenges they don't teach you in school," he says, "such as office politics and competition between workers, as well as managing contractors. Guidance in these areas is much needed for me to get started down the right path in my career."

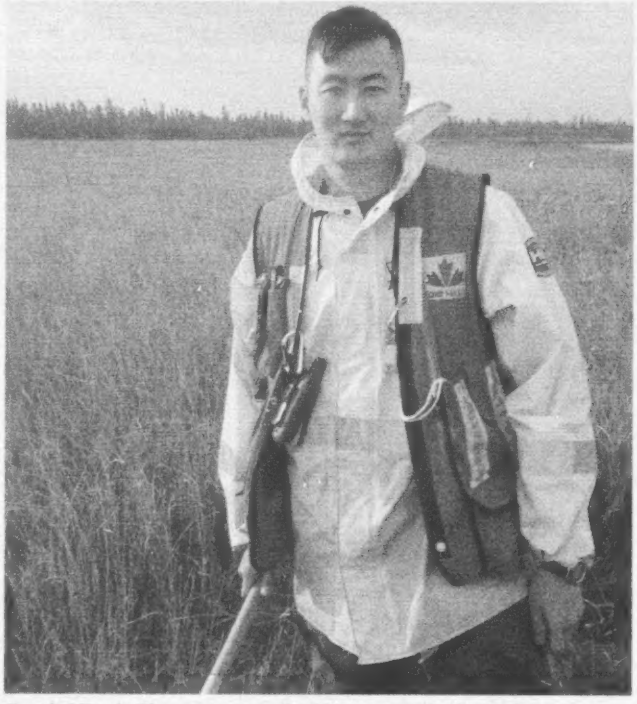
Victor's goal as a mentor is straightforward: helping provide technical guidance to younger biologists. This works well for Daxin, who says he wants to get a better understanding of his career in environmental protection and compliance and – ultimately – to assist him to direct the career path he wants. "Our relationship is a combination of friendship and work cooperation," comments Daxin. "Victor has an "open door" policy; he is very approachable and easy to reach when I need to consult him with my challenges and strategies."

Victor is equally enthusiastic about how their mentor/ protégé relationship is working: "I know and understand that Daxin is anxious to learn more, not only in his field but also the socio-economic aspects of working in the industry," he says. "Moreover, he is humble and willing to open his mind to alternative ways of handling practical events."

When we see a protégé with a humble and curious mind, paired with a mentor who is experienced and caring, it seems like the very definition of a successful relationship and a "win" for the participants ***and*** the program.

Victor Ladipo, MSc., P. Biol., *lives in Calgary and is a Principal at 21st Century Environmental Consultants Inc. With over 18 years experience in natural resource management, his expertise include fisheries management (water crossings) as well as greenhouse gas inventory quantification and environmental regulatory permitting and compliance management. He works on projects throughout British Columbia, Saskatchewan and Alberta.*

Daxin Zhang, BSc., BIT, *received his BSc. from the University of British Columbia in 2012 and has been working for Suncor, travelling frequently from Suncor's Calgary office to Edmonton and the Fort McMurray-Fort Hills site, especially in summer. His areas of responsibility include developing standards, procedures and job safety analysis for field operations, leading contractors and students in environmental field surveys to ensure safety, accuracy and efficiency (water, vegetation, wildlife (mammals), birds, and invertebrates), working to solve environmental issues at construction site to ensure regulatory compliance and beyond, producing timber salvage and winter burn plans, and industrial waste water reports etc. for regulatory compliance.*



Protégé Daxin Zhang spent much of his summer in the field.

Forty years past: giving birth to the ASPB

The approach of our Society's fortieth anniversary in 2015 is a good time to look back on some of the factors that led to the Society's foundation. The following article is a préçis of a paper published in 2010 in the *Canadian Field-Naturalist (124(4)* by authors Lu Carbyn, Ph.D, Robin Leech, P. Biol., and Gary Ash, P. Biol., entitled *The evolution of biological societies in Alberta.*

When considering the birth of the Alberta Society of Professional Biologists four decades ago, it is worthwhile taking a brief look at what was – back then – the Canadian Society of Wildlife and Fisheries Biologists. The CSWFB had been established in 1958 and was a Canada-wide organization with regional chapters in the Maritimes, Quebec, Ontario, the Prairie Provinces, British Columbia and the Territories.

The CSWFB had a strong traditional base in the classical disciplines of wildlife and fisheries biology, with members from government agencies and universities, and at that time there were few, if any, active environmental consultants. The founding members of the CSWFB stated that the aims of the Society were "to establish and maintain the highest possible professional standards in wildlife and fisheries research and management, and to develop all phases of wildlife and fishery management along sound lines in relation to proper land use and in accordance with the best interests in the community."

According to the authors of the original paper, consultants burst onto the scene in the late 1960s and early 1970s. It was also a time when federal and provincial governments began to establish departments of the environment, and laws were enacted to cover environment and resource protection. With the emergence of those laws, the growth of private initiatives and environmental consultancies was inevitable. So too was organizational evolution: the once close-knit Canadian Society of Wildlife and Fisheries Biologists began to fall apart in the late 1960s. In 1968, the CSWFB's publication ***Canadian Wildlife and Fisheries Newsletter Bulletin*** noted there had been: a decrease in growth of the society, a failure to attract provincial and federal resource biologists, and the gradual evolution of the society away from one seeking to create professional status to one attempting to provide a professional voice on topics of resource use.

Ultimately, the name of CSWFB was changed to the Canadian Society of Environmental Biologists (CSEB), and this change did not satisfy or accommodate all biologists in Alberta. Much debate went on in the professional community. The more conservative among the professionals (largely government administrators and individuals in newly established consulting firms) demanded a more structured professional group. Nevertheless, the CSEB survived, but only as a much smaller national organization with generally weaker provincial chapters.

With these changing trends, there were also competing visions of what professional organizations should be about. In the early 1970s, the struggle for influence and membership between the different organizations serving biologists was very pronounced and resulted in heated debates. On the one hand, there were those who believed in environmentally oriented actions, urging biologists to speak up on environmental issues. Another group felt that professional biologists should form a "society" to protect professionalism and to establish an organization which would evolve as a self-regulating body in Alberta. Such a society would be committed to promoting excellence in the practice of biology, and that truly was the genesis of the Alberta Society of Professional Biologists that we know today.

The principal leader in the movement towards establishing the ASPB as a professional regulatory organization, equivalent to those of the engineers, agrologists, veterinarians and others, was Dr. Stu Smith (at that time the Alberta Director of Wildlife and Fisheries). Smith, Dr. Robin Leech, Don Dabbs, P. Biol. and others helped to register the ASPB as a legal society in 1975. The ASPB was registered as a professional regulatory organization under the Professional and Occupational Associations Registration Act (POARA) of Alberta in 1991, permitting its members to have the exclusive right to title of Professional Biologist (but not with the exclusive right of practice, as is the case with Professional Engineers).

The ASPB has grown at a remarkable rate and has established a very effective society with a well-funded infrastructure. There are major differences between the ASPB and CSEB. The main one is that the ASPB is a provincially regulated organization (PRO) with legal status and exclusive right to title (Professional Biologist or P. Biol.) for its members, whereas the CSEB is an interprovincial organization, without provincial regulation, legal status or title for its members. And, typically, the ASPB does not comment on controversial environmental issues, but rather restricts its involvement to professionalism, education and self-regulation of its members.

Interprovincial issues

In the spring of 2006, the governments of British Columbia and Alberta entered into an agreement where professionals and trades people could move from one province to the other without hindrance. This was called the Trade, Investment and Labour Mobility Agreement (TILMA), which came into effect for

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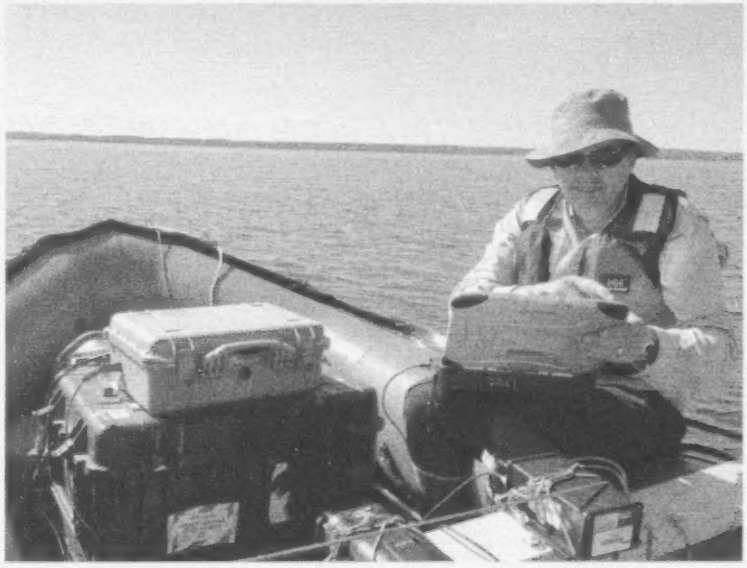
Changing roles: moving along a biologist's career path

Gary Ash, M.Sc., P. Biol., is a Principal at Golder Associates at the firm's Edmonton office. He is a member of the Board of Directors of the Alberta Society of Professional Biologists, where he has served for a number of years. BIOS recently presented him with a number of questions about his career and the implications of moving from a field biologist to becoming a senior member of a professional team. We have included the questions below, along with his written responses:

BIOS: You have been a P. Biol. since 1984, and have also been actively involved with the Society's committees and the Board as well as moving through your own career. How would you characterise the phases of your professional practice?

GA: I started out in 1974 after graduating with an MSc as a field biologist for a consulting company, working on fisheries studies relating to the Site C Hydroelectric Project on the Peace River near Fort St. John, BC. Over the years, I spent less time in the field and more time in management of the field programs and managing and mentoring junior biologists, as well as company management. In the later years, most of my time is spent on senior input and review of junior and intermediate biologist's projects and reports, as part of our quality control and mentoring programs.



Biologist Gary Ash, still gets in some time in the field despite being increasingly involved in management issues (shown here conducting hydroacoustic assessment on an Arctic Lake last summer).

BIOS: Many ASPB members - at least the ones involved in the "bugs and bunnies" practice areas - clearly spend their early years working through an endless succession of field studies and reports. Is there some sort of magical time warp through which biologists pass and suddenly realize they are spending more time managing the work of other biologists and a lot less time engaged in hands-on practice?

GA: No, I don't think there is anything magical. It is sort of like teenagers turning into "real" people. It just gradually happens!

BIOS: Have you found that regulatory issues, and even litigation, are taking up more of your time as you move forward? And is that because the requirements of the profession are changing, or because you are called upon to bring your years of experience to bear on more thorny issues?

GA: Although I have not been involved in much of the litigation side of things, I have been – and am currently – involved as an expert witness in regulatory hearings. We do a lot of environmental impact assessments of major developments, and these usually culminate in a regulatory hearing. Typically, as senior specialists, we are the ones who end up being called as the experts to testify and answer questions relating to our assessments at the regulatory hearings. Thus, we have to review all of the work done on the project and be prepared to answer questions and defend that work.

BIOS: When you are involved with regulatory issues at that level, including hearings and litigation, do you feel your professional designation as a P. Biol. lends weight to your credibility?

GA: Yes, for sure. Often we are involved with engineers and lawyers who have professional designations behind their names, and being a P. Biol. with our code of ethics that we follow certainly helps in establishing our credibility.

BIOS: Do you use your designation differently now from when you first got into practice? What have been the benefits at different stages of your career?

GA: Signing off on reports with our P. Biol. credential has always been an important consideration throughout my career – including, of course, the importance of the P. Biol. credential for helping establish credibility when appearing as a witness in a regulatory or litigation hearing.

BIOS: Thank you!

After the field

by Ken Kranrod, M.Sc., P. Biol.

I am sure many readers will relate to this article, since my interest in biology stemmed from a love of the outdoors and a desire to help 'make things better' for the environment. In my mind, the best way to do this was to become involved in academic field research, which led to consulting in the emerging practice of environmental assessment and monitoring. This resulted in many years of biological field work across northwestern Canada ranging from pristine wilderness areas to industrial sites. Of course, working outside meant enduring cold, rain, mud, heat and bugs – the battle scars of a field biologist! But, these were balanced by moments of seemingly perfect weather, beautiful vistas, interesting species and amazing experiences. And it was all done in the pursuit of data, whether it was for a research project or a regulatory requirement. Without question, this was what being a Professional Biologist was all about.

Ken Kranrod is VP of the Alberta Conservation Association; he snagged this walleye on a fishing trip on Lake Newell this summer.

Over time the boots, backpacks and data gathering were gradually replaced with desks, computers and report writing as supervising and management became more required. These duties ultimately gave way to time spent in discussions and meetings with organizations and companies in order to support and strengthen conservation in Alberta. Although very rewarding, it is far from those early days of biology field work - there are no data to record and analyze, no reports for me to stamp and sign. So when it came time for my annual ASPB membership renewal, I didn't really feel like I was still practicing straight-ahead biology, and so began to ask the question, "Am I still a Professional Biologist?"

I've given it a fair bit of thought, coming to realize that I am by no means the only one in this situation. I don't work outdoors anymore, but my education and field experiences have nonetheless prepared me for the office environment. And I know for certain that I would be much less effective in my current role without that background. Although I personally don't collect data, analyze results or write reports any longer, my efforts help create partnerships and collaborations which directly benefit conservation; support for species studies, habitat protection/enhancement, and increasingly introducing, educating and exciting younger generations with understanding and appreciation for the outdoors and outdoor pursuits. Activities like these add to the overall profession of biology and help move it forward – I am still contributing but simply in a different way. So it is possible to still be in the field of biology without being in the field.

I was actually quite relieved after all this, and renewed my annual ASPB membership with the confidence and pride that I could legitimately retain my status as a Professional Biologist in Alberta even though my daily work had changed substantially over the course of my biology career. Going forward, I plan to continue practicing professional biology in Alberta so I can 'make things better', and maintaining my ASPB membership will be an integral part of that process.

Forty years past, cont'd from page 8

municipalities, academic institutions, health authorities, school boards and crown corporations in April, 2009. A member in the ASPB need only show credentials and present a letter confirming good standing with ASPB, and pay the membership fee, to become a Registered Professional Biologist (R.P.Bio.) in British Columbia. The person could either maintain both professional memberships, or give one up, depending on where she or he lives and works. Membership in the Association of Professional Biologists of British Columbia (APBBC) requires that one must first be a member in good standing of the College of Applied Biology (CAB-BC). Professional Biologists in British Columbia are governed by the CAB.

The coming into force of the TILMA resulted in an increase in the memberships of the ASPB and the CAB-BC, since there are many professional biologists who work regularly in both provinces. The TILMA's successor – the New West Partnership Trade Agreement –includes the Province of Saskatchewan. *(Editor's Notes: While many biologists working in the Province of Saskatchewan belong to the ASPB, there is an initiative underway to form a professional society there. At time of publication, the ASPB has a membership of just over 1600 professional biologists.)*

Are disturbed forests more diverse?

"Conservation biology is a value driven science which at its core places value on conserving nature. It is a rare sort of science that accepts a bias as its starting point." (SJM, Chapter 5)

Stephen J. Mayor, M.Sc., Ph.D., received his doctorate from the University of Alberta in 2014. His research interests include biodiversity, biogeography, macroecology, conservation biology, community ecology, and ecological scaling, with a broad goal of answering fundamental ecological questions relevant to conservation. Stephen is currently studying the phenology of migratory birds in relation to climate change, by uniting citizen science data with satellite products at a continental scale.

Human disturbance and boreal vascular plant biodiversity in Alberta

by Stephen J. Mayor, Ph.D.

Abstract:

The worldwide biodiversity crisis has intensified the need to better understand how biodiversity and human disturbance are related, yet this relationship lacks both consensus in theoretical expectations and consistency in observed empirical patterns. This paper presents one of the largest extent studies of human impacts on boreal plant biodiversity to date, in the boreal ecoregion of Alberta, where disturbance in sites range ranged from 0 – 100 % area disturbed by varying land use types including agricultural fields, forestry cut-blocks, and petroleum extraction.

The 'intermediate disturbance hypothesis' (IDH) suggests that disturbance regimes generate predictable non-linear patterns in species richness, but evidence often contradicts IDH at small scales and is generally lacking at large regional scales. I show that across a broad region, species richness peaked in communities with intermediate anthropogenic disturbance (as predicted by IDH) even when accounting for many environmental covariates. IDH was consistently supported across trees, shrubs, forbs, and grasses and with temporary and perpetual disturbances. However, only native species fit this pattern; exotic species richness increased linearly with disturbance.

A fundamental impediment to understanding the diversity-disturbance relationship is that both diversity and disturbance can depend on the scales at which they are sampled. To test the dependence of species richness on disturbance scale and the scale-dependence of the intermediate disturbance hypothesis, I hold the area over which species richness is measured constant and instead manipulate the area over which human disturbance is measured. I show the shape of richness-disturbance relationship is consistent across scales, but predictions of richness depend on the scale at which disturbance was measured.

I also explore the impacts of human disturbance on community composition and structure, both to identify the risks facing communities and to assess the potential utility of these metrics for monitoring applications. In particular, I explore ranked species occupancy curves, species functional trait dispersion, and species specialization in relation to anthropogenic disturbance extent.

Disturbed communities differed in functional traits, particularly in fruit and seed characteristics, but community structure was similar across communities regardless of disturbance class, and both species specialization and functional dispersion of traits were not strongly related to disturbance. The full paper is available for download from the ASPB website www.aspb.ca/newsletter under the heading "Download Technical Papers" in the right-hand column.

Taxonomy Challenge winner announced

The Presidential Taxonomy Challenge judging team came up with 13 vegetation species visible in our cover photo (*BIOS, Spring Edition, 2014*). The winner of the contest (there were four entries) is Michael Schulz, P. Biol.

BIOS would like to thank ASPB Past-President Karoliina Munter, P. Biol. for the original photo, taken a year ago near Norman Wells, NWT, as well as current President Christopher Clement, P. Biol. and his colleagues for judging the entries. We would also like to thank the four entrants for taking the time and interest to participate!

The thirteen species judged to be present are:

Shrub funnel lichen ***Cladonia crispate***
Icelandmoss ***Cetraria ericetorum*** or ***islandica***
Wavy dicranum ***Dicranum undulatum***
Flattened snow lichen ***Flavocetraria nivalis*** (possibly ***F. Cucculata)***
Horn cladonia ***Cladonia cornuta***
Suphur cup ***Cladonia deformis*** (or possibly ***C. Sulphurina)***

Black-footed reindeer lichen ***Cladina stygia*** (S2*)
Yellow reindeer lichen ***Cladina mitis***
Fairy puke ***Icmadophila ericetorum***
Cloudberry ***Rubus chamaemorus***
Northern bog-laurel ***Kalmia polifolia***
Small bog cranberry ***Vaccinum oxycoccus***
Stems likely of bog cranberry ***Vaccinum vitis-idaea***

2015 ASPB CONFERENCE

Witness to Change

"A Generation of Science, Regulation and Conservation"

40th ANNIVERSARY

ASPB
ALBERTA SOCIETY OF PROFESSIONAL BIOLOGISTS

March 31 - April 1, 2015

The Radisson Hotel & Conference Centre
Canmore, Alberta

The conference will celebrate forty years of the professional practice of biology in Alberta and the growing public demand for accountability in the management of our ecosystems. It will examine changes we have witnessed on the landscape over the last 40 years in the province, and the current public perceptions of working biologists.

This will be an excellent opportunity for biologists, regulators, resource managers and industry to learn about and discuss how biology affects policy decision making and the future of biological resources in Alberta. Topics will include how all sectors can work together to protect resources in the province, Alberta's history of regulating remediation and reclamation and, of course, the impact of the 2013 flood in southern Alberta.

PHOTOGRAPHY BY BOB COOY

CALL FOR PAPERS
go to www.aspb.ab.ca/conference

The Alberta Society of Professional Biologists (ASPB) is a professional society which is committed to the promotion of excellence in the practice of biology.